REMARKS

Claims 1-8, 10, 30-33, 35, 44, 65, 68, 70-72 and 74-93 are pending in this application. By this Amendment, claims 1, 30, 65 and 74 are amended and claim 73 is canceled without prejudice to, or disclaimer of, the subject matter recited therein. In addition, new claims 84-93 are added. Claims 8, 33, 35, 72 and 79 are amended to correct informalities and to conform to the amendments to the independent claims. Support for the amendments and new claims can be found, for example, in Figs. 1 and 2 and page 83, lines 19-26. No new matter is added.

I. Information Disclosure Statements

Information Disclosure Statements with Forms PTO-1449 were filed in the above-captioned patent application on October 25, 2010 and March 28, 2011, respectively. In addition, an Information Disclosure Statement with Form PTO-1449 is being filed concurrently with this Amendment. The Examiner is requested to initial and return to the undersigned copies of the Forms PTO-1449.

II. The Claims Define Patentable Subject Matter

The Office Action rejects claims 1-4, 6, 8, 10 and 70-72 under 35 U.S.C. §103(a) over U.S. Patent No. 5,063,582 to Mori et al. ("Mori") in view of U.S. Patent No. 4,509,852 to Tabarelli et al. ("Tabarelli"); rejects claims 73-77 and 79-83 under 35 U.S.C. §103(a) over Mori in view of Tabarelli, further in view of U.S. Patent Application Publication No. 2004/0165159 to Lof et al. ("Lof"); rejects claims 5, 7, 30-33, 35, 65 and 68 under 35 U.S.C. §103(a) over Mori in view of Tabarelli and U.S. Patent Application Publication No. 2004/0189964 to Nijmeijer et al. ("Nijmeijer"); and rejects claim 78 under 35 U.S.C. §103(a) over Mori in view of Tabarelli, Nijmeijer and Lof. The cancelation of claim 73 renders the rejection of claim 73 moot. The rejections of the remaining claims are respectfully traversed.

Mori and Tabarelli would not have rendered obvious "[a]n exposure apparatus which exposes a substrate by radiating an exposure light beam onto the substrate through a liquid,

the exposure apparatus comprising...a temperature adjustment system which performs temperature adjustment for the substrate-holding member depending on a temperature of the liquid to be supplied from the supply inlet onto the substrate held by the substrate-holding member," in combination with the other features recited in claim 1.

Mori teaches a lithographic exposure apparatus that includes a soft x-ray source and performs a lithographic exposure, wherein the flow rate of a temperature control medium (liquid) supplied into a wafer chuck 5 (which supports the wafer) is controlled to be different during an exposure operation than during a non-exposure operation, while suppressing the vibration generated in the wafer chuck by the supply of the temperature control medium during the exposure operation (see Mori, Figs. 1-3, Abstract and col. 2, line 20 to col. 3, line 57). In addition, the exposure operation of Mori is performed in a dry environment. The Office Action acknowledges that Mori fails to teach exposing the substrate through a liquid and adjusting the temperature of the substrate-holding member depending on a temperature of the liquid to be supplied onto the substrate held by the substrate-holding member. However, the Office Action asserts that Tabarelli remedies this deficiency.

Tabarelli discloses a photolithographic projection apparatus which performs an exposure while a support 1 retaining a semiconductor disk 8 is immersed in a liquid 6 in a container 2 (see Tabarelli, Figs. 3 and 4 and col. 6, lines 28-42). The Office Action alleges that, because the support 1 of Tabarelli is immersed in the liquid 6, the temperature of the support would be adjusted based on the temperature of the liquid (see Office Action, page 3, lines 1-6). Applicants respectfully disagree with the Office Action's assertion.

In particular, Applicants respectfully assert that there is no reason to combine the references, much less in the manner proposed by the Office Action to render obvious the subject matter of the pending claims. That is, one of ordinary skill in the art would not have modified Mori with Tabarelli's immersion system for any reason, much less for the reason

given by the Office Action on page 3. Further, claim 1, for example, recites a temperature adjustment system, which performs temperature adjustment for the substrate-holding member depending on a temperature of the liquid to be supplied onto the substrate held by the substrate-holding member. Mori discloses that the temperature of the wafer chuck 5 is controlled to dissipate heat due to exposure. Thus, neither reference discloses a temperature adjustment system as recited in claim 1.

Mori and Tabarelli also fail to disclose "a supply inlet from which the liquid is supplied, the liquid supplied from the supply inlet covering only a portion of an upper surface of the substrate during exposure; a substrate stage having a substrate-holding member by which the substrate is held, the substrate-holding member holding the substrate on an underside of the substrate and the substrate-holding member being movable below the supply port," as recited in claim 1.

Furthermore, Lof and Nijmeijer fail to remedy the deficiencies of Mori and Tabarelli. For example, the Office Action asserts that Nijmeijer teaches a first substrate stage WTa, which has a substrate-holding member for holding the substrate and which is movable while holding the second substrate stage WTb, which has a substrate-holding member for holding the substrate and which is movable. However, Nijmeijer merely teaches that the working ambient may comprise a liquid to improve the optical performance (see Nijmeijer, paragraphs [0139] and [0140]). Nijmeijer further teaches that the lithographic apparatus may also be of a type wherein the substrate is immersed in a liquid having a relatively high refractive index so as to fill a space between the final element of the projection system and the substrate (see Nijmeijer, paragraph [0014]). Thus, Nijmeijer fails to remedy the deficiencies of Mori and Tabarelli.

Independent claim 30 recites "a liquid supply system having a supply inlet from which the liquid is supplied; a first substrate stage having a first substrate-holding member by which the first substrate is held, the first substrate-holding member holding the first substrate on an

underside of the first substrate and the first substrate-holding member holding the member being movable below the supply inlet; a second substrate stage having a second substrate-holding member by which the second substrate is held, the second substrate-holding member holding the second substrate on an underside of the second substrate and the second substrate-holding member being movable below the supply inlet...an exposure station which performs exposure for the substrate held by the other of the stages, the exposure station being provided with the liquid supply system which supplies the liquid onto the substrate held by the other of the stages, the supplied liquid covering only a portion of an upper surface of the substrate held by the other of the stages during the exposure; and temperature adjustment systems which are provided for the first substrate stage and the second substrate stage respectively and which perform temperature adjustment for the substrate-holding member of each of the stages depending on a temperature of the liquid to be supplied from the liquid supply system." Therefore, independent claim 30 is patentable at least for reasons similar to those discussed above for independent claim 1, as well as for the additional features independent claim 30 recites.

Independent claim 74 recites "holding a substrate by a substrate-holding member on an underside of the substrate; supplying a liquid from a supply inlet onto an upper surface of the substrate held by the substrate-holding member so that the supplied liquid covers only a portion of the upper surface of the substrate held by the substrate-holding member; controlling a temperature of the substrate-holding member depending on a temperature of the liquid to be supplied onto the substrate held by the substrate-holding member; moving the substrate below the supply inlet." Therefore, independent claim 74 is patentable at least for reasons similar to those discussed above for independent claim 1, as well as for the additional features independent claim 74 recites.

Dependent claims 2-8, 10, 31-33, 35, 44, 65, 68, 70-72 and 75-83 depend from independent claims 1, 30 and 74, respectively. Therefore, those dependent claims are patentable at least for their dependence from independent claims 1, 30 and 74, as well as for the additional features those claims recite.

Withdrawal of the rejections is respectfully requested.

III. New Claims 84-93

New claim 84 recites "a supply inlet from which the liquid is supplied, the liquid supplied from the supply inlet covering only a portion of an upper surface of the substrate during exposure; a substrate stage having a substrate-holding member by which the substrate is held, the substrate holding-member holding the substrate on an underside of the substrate and the substrate-holding member being movable below the supply inlet; and a temperature adjustment system which performs temperature adjustment for the substrate-holding member so that a temperature of the substrate-holding member is the same as a temperature of the liquid to be supplied onto the substrate held by the substrate-holding member." Therefore, new claim 84 is patentable at least for reasons similar to those discussed above for independent claim 1, as well as for the additional features new claim 84 recites.

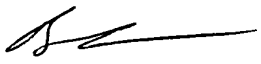
New claims 85-93 depend from new claim 84. Therefore, new claims 85-93 are patentable at least for their dependence from new claim 84, as well as for the additional features new claims 85-93 recite.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:
Petition For Extension of Time
Information Disclosure Statement

Date: April 26, 2011

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